UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,811	10/14/2003	Kai Numssen	BARDP0124US	1687

23908 7590 10/10/2007

RENNER OTTO BOISSELLE & SKLAR, LLP
1621 EUCLID AVENUE
NINETEENTH FLOOR
CLEVELAND, OH 44115

EXAMINER	
TALBOT, BRIAN K	

ART UNIT	PAPER NUMBER
1792	

MAIL DATE	DELIVERY MODE
10/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/684,811	NUMSSEN ET AL.	
	Examiner	Art Unit	
	Brian K. Talbot	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The amendment filed 7/27/07 has been considered and entered. Claim 11 has been canceled. Claims 1-10 remain in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. In light of the amendment filed 7/27/07, the 35 USC 112 second paragraph rejections, have been withdrawn.

Claim Rejections - 35 USC § 103

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al. (6,943,136) in combination with (a) Groves et al. (6,899,928) or (b) Nagaishi et al. (5,248,649) or Himtermaier et al. (6,177,135) in combination with Groves et al. (6,899,928).

Kwon et al. (6,943,136) teaches a superconducting structure whereby a superconducting buffer layer is applied to a substrate followed by another superconducting layer. Both the superconducting layers can be of the type ReBCO. Rare earth elements (Re) include samarium, neodymium, gadolinium, europium etc. The substrate can include a buffer layer prior to the superconductor buffer layer. The superconducting buffer layer can be from 5-50 nm in thickness. The rate of formation can be varied between 0.1 to 200 A/s by changing the repetition rate of the laser or the divergence (abstract and col. 2, line 10 – col. 4, line 60).

Kwon et al. (6,943,136) while teaching changing the rate of formation is known, fails to teach changing the rate of formation from low to high.

(a) Groves et al. (6,899,928) teaches depositing buffer layers and YBCO layers. The buffer layers are applied with a growth rate of 0.5 nm/s followed by the YBCO layer having a growth rate of 2.0 nm/s to obtain improved lattice matching with the final YBCO layer(col. 6, lines 4-18).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Kwon et al. (6,943,136) process by slowing down deposition of the superconducting buffer layer as evidenced by the Groves et al. (6,899,928) with the expectation of achieving a higher quality buffer film which would in turn produce a higher quality superconducting film thereon based upon the crystallographic structure of the buffer film being continued throughout the superconducting layer.

(b) Nagaishi et al. (5,248,649) teaches a process for preparing a superconducting thin oxide. Nagaishi et al. (5,248,649) teaches the pulsed rate of the pulsed laser beam is adjusted

between 0.1- 10 HZ and the application is interrupted at each time the superconductor is grown at a growth rate of 0.5 A/s (abstract). Nagaishi et al. (5,248,649) teaches that the quality of the resulting film can generally be improved by slowing down the growth rate within a certain range (col. 2, lines 55-65).

Himtermaier et al. (6,177,135) teaches that it would be helpful to have a lower growth rate for a nucleation layer and then increasing the growth rate for the second deposition step as this would facilitate compositional growth that depends upon the surface to which the coating is applied (col. 10, lines 17-30).

Nagaishi et al. (5,248,649) or Himtermaier et al. (6,177,135) fail to teach the claimed growth rates of less than 1 nm/s and greater than 1 nm/s.

Groves et al. (6,899,928) teaches depositing buffer layers and YBCO layers. The buffer layers are applied with a growth rate of 0.5 nm/s followed by the YBCO layer having a growth rate of 2.0 nm/s to obtain improved lattice matching with the final YBCO layer(col. 6, lines 4-18).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Kwon et al. (6,943,136) process by slowing down deposition of the superconducting buffer layer as evidenced by Nagaishi et al. (5,248,649) or Himtermaier et al. (6,177,135) having the growth rate of Groves et al. (6,899,928) with the expectation of achieving a higher quality buffer film which would in turn produce a higher quality superconducting film thereon based upon the crystallographic structure of the buffer film being continued throughout the superconducting layer.

Response to Amendment

6. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that the prior art failed to teach the claimed growth rates as well as changing the growth rate from low to high.

Groves et al. (6,899,928) clearly teaches this limitation as detailed above.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BKTalbot 10/1/07

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT